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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FABIO PERINI

Appeal 2009-002586
Application 10/527,903
Technology Center 1700

Decided:¹ June 2, 2009

Before EDWARD C. KIMLIN, MARK NAGUMO, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 the final rejection of claims 1-20.² We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

² A hearing was held in this appeal on May 19, 2009.

We AFFIRM.

Appellant claims an apparatus for continually joining paper webs comprising compressive means including a roller or cylinder having a hard outer surface supported by an underlying elastic surface (claim 1).

Claims 1, 5, 12, and 17 are illustrative:

1. An apparatus for continually joining paper webs, the apparatus comprising:

a compressive means for compressing paper webs onto an impression cylinder or roller while the webs advance toward an outlet section of the apparatus, said compressive means including a roller or cylinder having a hard outer surface supported by an underlying elastic surface.

5. An apparatus according to claim 1, wherein said outer surface of said compression roller is made of steel.

12. A method according to claim 11, wherein said single layer of steel is connected to said elastic surface via an adhesive.

17. An apparatus for continually joining paper webs, the apparatus comprising:

a plurality of paper webs;

an impression roller having an outer impression roller surface defining surface reliefs for contacting one of said paper webs;

a compressing roller having a hardened outer surface for contacting another of the paper webs and an elastic inner surface, said hardened outer surface engaging said elastic inner surface such that said hardened outer surface is disposed opposite said elastic inner surface, said impression roller and said compressing roller defining an outlet section, said compressing roller pressing said paper webs against said impression roller when said paper pass through said outlet section such that a continuously joined paper web is formed.

The Examiner relies on the following prior art references as evidence of unpatentability:

Kubo (as translated)	JP 10-249916	Sep. 22, 1998
McNeil	US 6,030,690	Feb. 29, 2000
Eisenschmidt (as translated)	DE 10043989 A1	Mar. 29, 2001

The rejections as presented by the Examiner are as follows:

1. Claims 1-4, 6-10, 13, 16, 17, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eisenschmidt in view of Kubo.
2. Claims 5, 11, 12, 14, 15, 18, and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eisenschmidt in view of Kubo and McNeil.

With regard to rejection (1), Appellant argues the “hard outer surface” feature of independent claims 1, 9, and 17 with regard to each rejected claim. Appellant does not make any arguments specific to the features of any dependent claim under rejection (1). Accordingly, we select claims 1 and 17 as the representative claims on which to render our decision.

With regard to rejection (2), Appellant argues claims 12, 15, and 19 as a group and claims 5, 11, 14, and 18 as a group. We select claims 12 and 5 as representative of each respective group on which to render our decision.

CLAIM CONSTRUCTION: COMPRESSIVE MEANS

Appellant indicates that the “compressive means” of claim 1 is to be construed as a means-plus-function limitation (App. Br. 2).

ISSUE

Whether the claim feature “compressive means” is a means-plus-function limitation that must be construed in accordance with 35 U.S.C. § 112, sixth paragraph? We decide this issue in the negative.

PRINCIPLES OF LAW

A claim that recites a list with sufficient structure for performing a claimed function of a claimed “means for” limitation does not invoke 35 U.S.C. § 112, sixth paragraph, which reads:

An element in a claim for a combination may be expressed as a means or step for performing a specified function *without the recital of structure, material, or acts in support thereof*, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. [Emphasis added.]

FACTUAL FINDINGS

1. Claim 1 recites “a compressive means for compressing paper webs onto an impression cylinder or roller” (claim 1).
2. Claim 1 further recites “said compressive means including a roller or cylinder having a hard outer surface supported by an underlying elastic surface” (claim 1).

ANALYSIS

We determine that claim 1 recites sufficient structure for the “compressive means” feature that § 112, sixth paragraph, is not invoked by the claim. Specifically, claim 1 plainly recites that the “compressive means” includes “a roller or cylinder having a hard outer surface and supported by

an underlying elastic surface”, which is sufficient structure for performing the claimed function of “compressing paper webs onto an impression cylinder or roller.” Thus, Appellant has not complied with the plain language of the statute, which permits means-plus-function claims only without recitation of corresponding structure.

Accordingly, we determine that the “compressive means” of claim 1 does not invoke 35 U.S.C. § 112, sixth paragraph.

REJECTION (1): § 103 EISENSCHMIDT IN VIEW OF KUBO

With regard to claim 1, Appellant argues that the “hard outer surface” claim feature is missing from the combined teachings of Eisenschmidt and Kubo (App. Br. 8-11). Appellant contends that Eisenschmidt does not teach or suggest the combination of a roller having a hard outer surface supported by an elastic surface (App. Br. 9). Appellant argues that Kubo’s metal outer surface of the roller is resilient, not hard as claimed (App. Br. 10).

With regard to claim 17, Appellant makes similar arguments as with claim 1 (App. Br. 16). Appellant additionally argues that the teachings of Kubo and Eisenschmidt as a whole fail to teach or suggest the “combination of a means for forming a continuous paper web as claimed [in claim 17]” (App. Br. 16). Appellant contends that Eisenschmidt or Kubo fails to disclose joining two paper sheets together (App. Br. 16-17).

ISSUES

Has Appellant shown that the Examiner erred in finding that Kubo discloses a roller having “a hard outer surface supported by an underlying elastic surface” as claimed? We decide this issue in the negative.

Has Appellant shown that the Examiner erred in finding that the combined teachings of Kubo and Eisenschmidt would have suggested all the features of claim 17? We decide this issue in the negative.

PRINCIPLES OF LAW

During examination, claim terms are given their broadest reasonable interpretation consistent with the Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The Patent and Trademark Office applies to the claim terms the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicants' Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

When assessing the obviousness of claimed subject matter, a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). A person of ordinary skill is also a person of ordinary creativity, not an automaton. *Id.* at 421.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

FACTUAL FINDINGS

3. Appellant does not contest that it would have been obvious to combine Kubo's roller having a metal outer surface and an elastic

- underlayer with Eisenschmidt's embossing apparatus "to provide the predictable result of improving the deflectability to impart better embossing of the materials" (App. Br. generally; Ans. 4). Rather, Appellant only contests whether the claimed roller structure (i.e., an elastic under layer and a hard outer surface) is taught or suggested by Eisenschmidt and Kubo (App. Br. 11).
4. The Specification discloses that "hardness" of the "hard outer surface" is such that the surface "will not deform to such an extent that could make it penetrate the cavities or impressions of cylinder (4)" (Spec. 6: 14-19). In other words, the Specification discloses that the "hard outer surface" deforms to some extent.
 5. Kubo discloses that a mirror roller for molding a smooth surface in a sheet extruder that uses a thermoplastic resin (Kubo Translation ¶ [0001]).
 6. Kubo discloses the mirror roller is made of a shaft core part, a rubber layer covering the shaft core part, and a metal layer for covering the rubber layer (Kubo Translation ¶ [0011]). The metal layer is made of nickel and chromium and is disclosed as being from 0.03 to 0.3 mm thick (Kubo Translation ¶ [0012]). The nickel tube is easily deformed by a local stress, which Kubo remedies by adding a chromium layer to avoid the defects (e.g., the plastic deformation) (Kubo Translation ¶ [0021]).
 7. Kubo teaches that if the metal layer thickness is greater than 0.3 mm the flexibility of the tube is deficient (Kubo Translation ¶ [0022]).
 8. Kubo discloses that the chromium metal layer is hard (Kubo Translation ¶ [0032]).

9. Kubo discloses that the mirror roller with the elastic underlayer and metal coating, is used to press a sheet of molten thermoplastic against an embossing roller to form prisms or lenses on the embossing roller side of the sheet and a mirror surface on the mirror roller side of the sheet (Kubo Translation ¶ [0039]). Kubo discloses that a mirror roller molds a “a smooth surface” on the thermoplastic sheet (Kubo Translation ¶ [0001]).

ANALYSIS

We begin our analysis by construing the claim phrase “a hard outer surface.” Appellants’ Specification indicates that the “hard” outer surface of Appellants’ claimed roller can deform to an extent that it does not penetrate the cavities or impressions of the other cylinder. Accordingly, we construe “a hard outer surface” as a surface that can deform to an extent that it does not penetrate the cavities or impressions of the other cylinder.

With this proper construction of the claim phrase “a hard outer surface”, we determine that Kubo teaches the disputed feature. Specifically, Kubo teaches a tubular metal layer made of nickel and chromium. Kubo further discloses that the chromium layer is hard and that the metal layer maybe flexible. Kubo discloses that the roller with the metal outer layer is used to form a mirror surface (i.e., a smooth surface) on one side of a thermoplastic sheet and prisms or lenses on the other side. In other words, Kubo discloses that the mirror roller (i.e., the roller with the metal covering and elastic underlayer) has a “hard” outer surface because it can deform to an extent to form a smooth (i.e., mirror) surface on one side of the sheet and, thus, does not penetrate into the prisms or lenses on the opposed embossing

roller. If the roller penetrated into the prism or lens cavities of the embossing roller, the opposing side of the sheet would not be smooth (i.e., mirror) surface, but rather dimpled or rough. Therefore, there appears to be a reasonable basis that using Kubo's roller in Eisenschmidt's embossing apparatus would have embossed Eisenschmidt's cellulosic sheets without penetrating the cavities or impressions on the opposing cylinder or roller. In other words, Kubo's roller would have produced a mirror surface (i.e., a smooth surface) on one side of Eisenschmidt's embossed tissue paper sheets. Accordingly, we determine that Kubo teaches the disputed feature.

Moreover, Appellant has not directed our attention to any credible evidence of record that the "resilient" cylinder described by Kubo is so resilient that it would penetrate depressions in the corresponding embosser roll described by Eisenschmidt when used for bonding cellulosic sheets. Once the Examiner had come forward with evidence indicating that the rolls described by Kubo, though "resilient" (as required by the claims) also were reasonably expected to be "hard," as that term is used in the claims, the burden shifted to Appellant to rebut. *See, e.g., In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) ("[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.") The burden shift is fair because, "as a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535 (CCPA (1972)).

With regard to claim 17, Appellant further argues that the references as a whole fail to teach or suggest the combination of a means for forming a

continuous paper web as claimed. However, Appellant argues features that are not in any of the claims. Specifically, claim 17 does not recite “means for forming a continuous paper web”; it merely recites an apparatus for continually joining paper webs. In any event, contrary to Appellant’s argument, Eisenschmidt plainly discloses that the embossing strongly bonds the individual layers of tissue together (Eisenschmidt Translation 4). Accordingly, Appellant’s argument is not persuasive.

Furthermore, the devices covered by claims 1 and 17 are defined to greater and lesser extents, respectively, by functional considerations and intended uses. Such limitations are not improper, but the metes and bounds of such claims tend to be rather broader than more precisely defined claims. Nonetheless, Appellant, having chosen to claim his invention in this way, bears the burden of distinguishing the claimed subject matter from the prior art. Having failed to do so, Appellant has failed to show harmful error in the Examiner’s rejections.

Appellant has not contested the combination of Kubo’s roller with Eisenschmidt’s embossing roller. For the above reasons, affirm the Examiner’s § 103 rejection of claims 1-4, 6-10, 13, 16, 17, and 20 under § 103 over Eisenschmidt in view of Kubo.

**REJECTION (2): § 103 OVER EISENSCHMIDT IN VIEW OF KUBO
AND MCNEIL**

With regard to claim 5, Appellant argues that there is no suggestion to modify the rollers of Kubo or Eisenschmidt with the steel material of McNeil (App. Br. 18). Further regarding claim 5, Appellant makes the same

argument regarding the “hard outer surface” feature made with respect to claim 1 (App. Br. 18).

With regard to claim 12, Appellant argues that the references fail to teach attaching a hard outer layer to an elastic underlayer using an adhesive (App. Br. 19).

ISSUES

Has Appellant shown that the Examiner erred in determining that there would have been a reason to use McNeil’s steel roller material for the outer surface of the embossing rolls of Eisenschmidt in view of Kubo? We decide this issue in the negative.

Has Appellant shown the Examiner erred in determining that it would have been obvious to use adhesive to bond hard outer surface layer with the elastic inner layer of the Eisenschmidt in view of Kubo and McNeil roller? We decide this issue in the negative.

PRINCIPLES OF LAW

For a *prima facie* case of obviousness all the claim features must be taught or suggested by the applied prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

The applicant bears the procedural burden of showing error in the Examiner’s rejections. *See, e.g., In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness”) (citation and internal quote omitted).

FACTUAL FINDINGS

10. The Examiner determines it would have been obvious to one of ordinary skill in the art to employ McNeil's steel in the outer surface of the embossing rolls of Eisenschmidt in view of Kubo because steel has inherent desirable physical and mechanical properties such as high strength and durability (Ans. 4). Appellant does not rebut the Examiner's motivation for combining McNeil's steel with Eisenschmidt's in view of Kubo's roll (App. Br. generally).
11. McNeil discloses that it is known to make the embossing rollers for paper production out of relatively non-deformable and rigid material such as steel (col. 5, ll. 58-61).
12. Kubo discloses that the hard outer layer is attached to the elastic underlayer using an adhesive (Kubo Translation ¶¶ [0025] and [0032]).

ANALYSIS

Contrary to Appellant's argument that there is no suggestion to combine McNeil's steel with Eisenschmidt and Kubo, the Examiner expressly stated a reason to combine the references based on knowledge of one of ordinary skill in the art. Specifically, the Examiner states that motivation for the combination may be found in steel's inherent desirable physical and mechanical properties such as high strength and durability (Ans. 4). We agree. Accordingly, the Examiner has established a prima facie case of obviousness. However, Appellant has not shown error in or rebutted the Examiner's stated motivation.

Appellant's argument that none of the applied prior art teach or suggest using adhesive to attach the metal outer layer to the elastic underlayer in without persuasive merit. Kubo plainly discloses that adhesive may be used to attach the metal outer layer to the elastic underlayer.

For the above reasons, we affirm the Examiner's § 103 rejection of claims 5, 11, 12, 14, 15, 18, and 19 over Eisenschmidt in view of Kubo and McNeil.

DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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